A REVIEW OF THE SOUTH AMERICAN TWO-WINGED FLIES OF THE FAMILY SYRPHIDAE

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The present contribution to the knowledge of the South American Syrphidae is mainly based on the collection in the United States National Museum. Additional material was borrowed from the British Museum through the kindness of Maj. E. E. Austen. In this material a number of new genera and species have been recognized and are herein described.

A paper now in press [1] contains a treatment of all the South American Xylotini known to the writer.

The Syrphidae of Chile have been treated as a unit several times by various authors. A large share of the present material is from Chile, and this has been treated in a separate section of the paper in order to preserve this unity.

The key which is here submitted for the determination of the genera of South American Syrphidae must be considered as a provisional one. The South American fauna is comparatively little known, and very probably many of the genera which exist there still await recognition. Most of the species known from this region were described prior to 1900, when the genera of this family were very imperfectly defined. This complicates the recognition of the old species and genera and makes for instability in the classification. The writer has found that about half of the genera are distinct from the Nearctic genera to which many of the old species had been assigned.

It is of interest to note that several of the larger genera and groups found in North America and Europe are as yet not authentically recorded from South America. These are the Chilosini, Sericomyinae, *Merodon*, *Eumerus*, and Criorrhini.

The subfamilies given in the key are the same as those given in my previous key (Reclassification of the Subfamilies, Tribes, and Genera of North American Syrphidae [2]) save that *Nausigaster* is

[1] Proc. U. S. Nat. Mus., vol. 69, art. 9. (Published on Dec. 1, 1926.)

[2] Shannon, Bull. Brooklyn Ent. Soc., vol. 16, 1921, pp. 67–69.

here included in the Chilosinae, thereby doing away with the Nausigasterinae. The genus is a highly modified one, but aside from its peculiarities it shows the subfamily characteristics of the Chilosinae.

The genus *Alipumilio* (new genus) is still more specialized than *Nausigaster*, inasmuch as the humeral calli are completely covered by the posterior part of the head, and consequently the calli are bare (a character heretofore recognized as peculiar to the Syrphinae), but this genus shows unmistakable relationships with the Chrysogasterini and is therefore retained in the Chilosinae. The absence of the spurious vein also removes it from the Syrphinae.

It must be understood that the characters used in the present key are chiefly applicable to the South American fauna. A rather scant representation of material permits the use of certain characters that probably would have to be abandoned if a key were made for both North and South America, or even if a larger representation of the South American material were available.

KEY TO THE SOUTH AMERICAN GENERA OF SYRPHIDAE

A¹. Antenna with a terminal style ---------- CERIOIDINAE.

B¹. Antennifer less than half the length of first antennal joint.

Cerioides Rondani.

B². Antennifer longer than length of first antennal joint.

Monoceromyia Shannon.

A². Antenna with a dorsa arista.

B¹. The humeral calli and the inter-humeral region destitute of pile (if spurious vein is absent see *Alipumilio*, Chilosinae); discal crossvein placed well before middle of discal cell; spurious vein always present; no stigmatical cross vein; male, as well as female, with five visible abdominal segments ---------- SYRPHINAE.

C¹. Squamae, squamal cilia and plumula well developed, the cilia of the lower squama equal to at least half the length of haltere; flies usually of broad form.

D¹. Face entirely black.

E¹. Face much broader than length of arista.

F¹. First antennal joint as long as second ---------- **Melanostoma** Schiner.

F². First joint much longer than second ---------- **Braziliana** Curran.

E². Face not broader than length of arista ---------- **Xanthandrus** Verrall.

D². Face largely yellow.

E¹. Metasternum long pilose.

F¹. Oral opening about twice as long as broad.

Claraplumula, new genus.

F². Oral opening four or more times as long as broad.

Fazia, new genus.

E². Metasternum bare.

F¹. Wings without villosity, glassy in appearance; head large, inflated ---------- Scaeva Fabricius.

F². Wings villose, head normal ---------- **Syrphus** Scopoli.

C². Squamae, squamal cilia, and usually the plumula, considerably reduced (the upper squama usually vestigial, lower squama very narrow, lower squamal cilia less than half the length of haltere, usually very short; plumula sometimes absent); slender flies.

D¹. Second abdominal segment strongly constricted and several times longer than broad, or abdomen very long and slender throughout.

E¹. Third longitudinal vein deeply constricted into first posterior cell. **Salpingogaster** Schiner.

E². Third vein moderately curved downwards or straight. **Baccha** Fabricius.

D². Abdomen parallel sided or moderately constricted basally.

E¹. A distinct row of stiff, erect hairs across anterior margin of mesonotum——**Ocyptamus** Macquart.

E². Without a distinct row of erect hairs across anterior margin of mesonotum.

F¹. Apical cross vein (post angular section) upright; a distinct black spot at apex of wing; second abdominal segment moderately constricted——**Calostigma,** uew genus.

F². Apical cross vein directed obliquely outward; wing without a black spot——**Mesogramma** Loew and **Allograpta** Osten Sacken.

B². Humeral calli and region between them more or less covered with pile; male, and sometimes female, with only four visible abdominal segments (sometimes three) exclusive of hypopygium.

C¹. Antennae usually very elongate (either the first or third joints or both, elongated); discal cross vein joining discal cell well before the middle; stigmatical cross vein present; apical cross vein (post angular section) usually upright; spurs usually present on either the third or fourth vein which projects into first posterior cell; metasternum girdled with chitin; hind basitarsus usually thickened. MICRODONTINAE.

D¹. Second abdominal segment greatly broadened on basal half, strongly constricted on apical half; face swollen below. **Rhopalosyrphus** Giglio-Tos.

D². Second segment not broadened basally and constricted apically; face uniformly sloped.

E¹. Third vein with or without a spur; fourth vein without spurs; abdomen constricted on basal half of second segment or behind the third, or abdomen more or less ovate——**Microdon** Meigen

E². Third vein without spur but a spur present on the fourth vein and on apical cross vein; abdomen constricted on basal half of second segment——**Mixogaster** Macquart.

C². Antennae rarely elongate; discal cross vein joining discal cell at or before middle; stigmatical cross vein rarely present (sometimes in Eristalinae); apical cross vein usually directed obliquely outward; third vein without, fourth vein rarely with spurs; metasternum usually membranous behind; hind metatarsus not thickened.

D¹. Arista with either long or very dense and short plumosity; face produced downwards; apical cross vein usually strongly recurrent on distal end; marginal cell usually closed; hypopeura with a tuft of pile; thorax usually with bristles——VOLUCELLINAE.

D². Arista bare or very thinly pilose; apical cross vein not, or very slightly recurrent on distal end (except *Alipumilio*).

E¹. Third vein deeply looped into first posterior cell; facial slopes pilose; metasternum pilose——ERISTALINAE.

F_1. Marginal cell closed and petiolated.

G¹. Thorax and abdomen with bands of tomentum. **Meromacrus** Rondani.

G². Thorax and abdomen without bands of tomentum (*Doliosyrphus*)----------**Eristalis** Latreille.

F². Marginal cell open.

G¹. Densely pilose, bumblebee like in appearance--**Mallota** Meigen.

G². Not densely pilose, unlike bumblebees in appearance.

H¹. Ocelli widely spaced; frontal lunule very large and broad; head much broader than high; males widely dichoptic. **Dolichogyna** Macquart.

H². Head, ocelli, and frontal lunule normal; males holoptic (always?).

I¹. Third antennal joint much longer than broad; first tergite with dense, appressed, yellow pile-----**Quichuana** Knab.

I². Third joint subquadrate.

J¹. Head broader than thorax; mesonotum without light stripes----------**Habromyia** Williston.

J². Head not broader than thorax; mesonotum with light longitudinal stripes----------**Helophilus** Meigen.

E². Third vein straight or moderately curved downwards; facial slopes usually bare (pilose in some Chilosinae).

F¹. Discal cross vein joining discal cell well before its middle; metasternum bare----------CHILOSINAE.

G¹. Apical cross vein (post angular section) directed obliquely inward; mesosotum distinctly broader than long. **Alipumilio**, new genus.

G². Apical cross vein not directed inward; mesonotum longer than broad.

H¹. Body deeply pitted; length of arista equal to width of third antennal joint----------**Nausigaster** Williston.

H². Body not noticeably pitted; arista longer than width of third joint.

I¹. Face distinctly pilose.

J¹. Arista longer than antenna, discal cross vein directed outward (*Pipiza*)----------**Penium** Philippi.

J². Arista much shorter than antenna; discal cross vein (post angular section) directed upwards, then outwards on distal half---------**Halictomyia**, new genus.

I². Face bare.

J¹. Frons and face rugose, apical cross vein upright. **Chrysogaster** Williston.

J². Frons and face not rugose; apical cross vein directed outward.

K¹. Body pile modified, scalelike; metasternum membranous behind.

L¹. Antenna moderate, second and third joints as long as broad----------**Eumyiolepta** Shannon.

L². Antenna much elongated, second and third joints much longer than broad---------**Lepidostola** Mik.

K². Body pile normal, composed of fine hairs; metasternum girdled with chitin.

L¹. Face with a straight keel; a transverse row of small black spines on anterior margin of mesonotum; male holoptic----------**Zonemyia** Shannon.

L². Face tuberculate in male, concave in female; no transverse row of spines on mesonotum; male dichoptic---------- **Valdivia**, new genus.

F². Discal cross vein joining discal cell near or beyond the middle (*Zonemyia* may be confused here but the transverse row of spines noted above will serve to separate this genus).

XYLOTINAE.

G¹. Metasternum pilose.

H¹. Hind femur with one or two apical toothlike processes ventrally.

I¹. Hind femoral process consisting of one tooth; hind coxa without spur (*Orthlophus* Bigot)---- **Tropidia** Meigen.

I². Hind femoral process bidentate; hind coxa with small spur.

J¹. Body very elongate; discal cross vein simple; male holoptic---------- **Acrochordonodes** Bigot.

J². Body broad; discal cross vein with a free-ending branch; male dichoptic---------- **Stilbosoma** Philippi.

H². Hind femur without apical process; face subcarinate.

I¹. Wings nearly devoid of villi, glassy in appearance; arista shorter than width of face.

Syritta St. Fargeau and Serville.

I². Wings villose, not glassy; arista distinctly longer than width of face---------- **Planes** Rondani.

G². Metasternum pubescent or bare.

H¹. Body dark colored.

I¹. Face black, with a median longitudinal ridge and two oblique ridges.

J¹. Abdomen strongly constricted basally.

Tatuomyia Shannon.

J². Abdomen of nearly uniform width-- **Crepidomyia** Shannon.

I². Face bright yellow with an obtuse longitudinal ridge; metathoracic spiracle distinctly larger than third antennal joint; hind trochanters of male spurred.

Sterphus Philippi.

I³. Face bluish black, gently concave in profile; metathoracic spiracle much smaller than third antennal joint; hind trochanters simple---------- **Philippimyia** Shannon.

H². Body entirely reddish yellow; very large and robust.

Eriophora Philippi.

The following genera have been recorded from South America, but as there is no material at hand from which good characters may be chosen to key them they have not been included.

Subfamily SYRPHINAE

Paragus Latreille:

annulipes Macquart---------- Brazil.

ruficaudatus Bigot---------- Brazil.

Epistrophe Walker:

imitator Curran---------- Venezuela.

Doros Meigen:

?*Doros odyneroides* Philippi---------- Chile.

This species very evidently belongs to some other genus than to *Doros* and probably belongs to the subfamily Chilosinae. The species may come in the genus herein described under the name *Valdivia*.

Subfamily CHILOSINAE

Pia Philippi:
cyanea Philippi ---------- Chile.
Trichopsomyia Williston:
polita, puella, tuberculata, longicornis Williston ---------- Brazil.
Sphegina Meigen:
?Sphegina chiragra Fabricius ---------- South America.
Argentinomyia F. Lynch—A:
testaceipes F. Lynch—A ---------- Argentina.
Myiolepta Newman:
haemorrhoidalis Philippi ---------- Chile.
luctuosa Bigot ---------- Chile.
It is very doubtful if either of these species belong to *Myiolepta*.
Rhingia Scopoli:
nigra Macquart ---------- Columbia.
harrisi Curran ---------- Brazil.

Subfamily VOLUCELLINAE

This subfamily is greatly in need of revision.
Volucella Geoffrey.
Glaurotricha Thomson.
Phalacromyia Rondani.
Temnocera St. Fargeau and Serville.
Viereckomyia Curran ---------- Columbia.
Apophysophora Williston:
hirtipes Macquart ---------- Brazil.
Lepidopsis Curran:
compactus Curran ---------- Brazil.

Subfamily XYLOTINAE

Macrometopia Philippi:
atra Philippi ---------- Chile.
Pterallastes Loew:
nubeculosus Van der Wulp ---------- Argentina.
Promilesia F. Lynch—A:
nectarinoides F. Lynch—A ---------- Argentina.
Spilomyia Meigen:
gratiosa Van der Wulp ---------- Argentina.
Ceriogaster Williston:
fosicithorax Williston ---------- Brazil.

DESCRIPTIONS OF NEW SPECIES FROM COUNTRIES OTHER THAN CHILE

Subfamily SYRPHINAE

XANTHANDRUS FLAVOMACULATUS, new species

Male.—A species easily recognized by the presence of an additional pair of large, yellow spots on the second tergite. Head large, entirely

black; ocellar and frontal triangles with black pile; antennal pits confluent; antennae fairly large, dark brown, reddish brown on lower portions; arista longer than antenna, reddish brown; face pale pollinose and pilose, save on the small shining tubercle; face receding downward, narrow, being about one-fourth the width of the head; mesonotum bronzy aeneous with fulvous pile; legs black, the apices of femora and bases of tibiae yellowish brown; fore legs unmodified; abdomen black; tergites two, three, and four, each with a pair of large, subquadrate, yellow spots; wings slightly smoky; apical cross vein nearly in line with posterior cross vein; halteres yellow. Length 8.5 mm.; wing 8 mm. One male.

Differs from *X. bucephalus* (Wiedemann) in having an additional pair of yellow abdominal spots present on second tergite.

Type locality.—Rurrenabaque, Beni, Bolivia (W. M. Mann, Mulford Biological Expedition), 1921–22.

Type.—Cat. No. 28754, U.S.N.M.

Genus BRAZILIANA Curran

Braziliana CURRAN, Ann.. Mag. Nat. His., ser. 9, vol. 16, 1925, p. 243.

Genotype.—(*Melanostoma*) *Braziliana longicornis* (Williston), by original designation.

BRAZILIANA PERUVIANA, new species

Male.—Closely allied to the genotype. Antenna elongate and slender, the first joint more than four times as long as broad, rather gently but distinctly bent basally, the outer two-thirds directed obliquely downward; second joint less than half the length of the first; the third nearly as long as the first; arista nearly equal to the combined length of the first two joints; face black, the sides with violet and coppery reflections, broadly pollnose and punctate; mesonotum bronzy aeneous with a pair of rather broad but very indistinct, pollinose stripes, clothed with brownish pile; anterior legs golden yellow, tarsi darker; midfemur brownish, becoming yellow apically, tibia and tarsus yellow; hind femur yellow on basal fourth, suddenly becoming shining very dark brown on remaining portion; tibia shining dark brown; tarsus yellow; abdomen very slightly constricted, blackish; third tergite with a pair of rather obscure yellow spots; wings entirely brownish. Length, 9 mm.; wing 7 mm.

One male.

B. longicornis differs in having the wings largely hyaline; the abdomen of the male is more constricted, as "it does not attain its full width till the tip of the third segment."

Type locality.—Rio Charape, Peru (September 13, C. H. T. Townsend).

Type.—Cat. No. 28755, U.S.N.M.

CLARAPLUMULA, new genus

Genotype.—Claraplumula latifacies, new species.

Of the tribe Syrphini. Head large, inflated, broader than the thorax; face yellow, very broad, nearly quadrate; antennae very widely separated, the distance between them nearly equal to length of antenna; below, on each side of face, is a deep slit; metasternum long pilose; wing entirely villose; plumula large; tergites two, three, four, and five each with a pair of large yellow spots.

The pilose metasternum separate this genus from all other Syrphinae except *Asarcina* (Oriental) and *Fazia* (see below). It is further separated from *Syrphus* by the large inflated head and widely separated antennae; from *Scaeva* by the villosity of the wings, and from *Fazia* by the broader face, less protruding oral margin, and much broader oral opening. In *Claraplumula* the oral opening is about twice as long as broad; likewise the torma is twice as long as broad; in *Fazia* the oral opening is very long and narrow, being more than four times as long as broad, and the torma is about four times as long as broad.

CLARAPLUMULA LATIFACIES, new species

Readily recognized by the large head, the four pairs of large yellow spots on the abdomen, and the smoky wings.

Male.—Ocellar triangle rather small, black pilose; frontal triangle very broad, black pilose; basal antennal joints yellowish brown, the third darkened; arista arising near base of third joint, black, slightly longer than antenna; face yellowish, with sparse, black hairs; very broad, in profile nearly straight from antennal base to the protuberance, thence rather sharply retreating to the anterior oral margin which is slightly produced; jowls very broad, more or less aeneous and pale pilose; mesonotum aeneous, with a pair of faint stripes, sides yellowish, scutellum yellowish; femora and tibia reddish brown, tarsi darker; abdomen black with four pairs of large yellow spots, anterior corners also yellow; wings smoky. Length 13 mm.; wing 11.5 mm.

Two males.

Type locality.—Tincochaca, 7,000 feet, Peru, Yale Peruvian Expedition (August 9, 1911). Also Paltaybamba, 5,000 feet, Peru.

Type.—Cat. No. 28768, U.S.N.M.

CALOSTIGMA, new genus

Genotype.—Calostigma elnora, new species.

Two female specimens representing a new genus and species are at hand from Bolivia, which possess two unique characteristics for the subfamily, Syrphinae, in which they belong.

Head hemispherical, circular in outline (frontal view), face projecting beyond antennal prominence; front unusually narrow; ocelli well advanced of occipital margin; eye nearly bordering onto oral margin; posterior oral region yellow; dorsum of thorax bounded by a yellow margin; metapleura yellow; abdomen constricted basally; tergites three, four, and five, each with five longitudinal yellow stripes; post angular section of apical cross vein straight and joining third vein at right angles; a conspicuous dark spot at tip of wing. (Fig. 5.)

This genus is perhaps closest to *Mesogramma*. The straight and upright apical cross vein and the apical spot in the wing serve to differentiate the two.

CALOSTIGMA ELNORA, new species

Female.—Face and front yellow, save for a black spot immediately above base of antennae and the ocellar region; antennae small, yellow; mesonotum shining black with a median longitudinal pale pollinose stripe and a pair of similar but submedian stripes which extend but half the length of mesonotum; sides of mesonotum yellow; scutellum yellow, the disk black; fore and mid legs yellow; hind femur yellow with a rather broad preapical dark ring; hind tibia black with a median bright yellow ring; hind tarsi yellowish, becoming darker apically; abdomen narrowed at juncture of first and second segments, the second widening posteriorly; first tergite black, the sides yellow; the second yellow with hind border black and two pairs of longitudinal black stripes; third, fourth, and fifth tergites black, each with five longitudinal yellow stripes; wings hyaline with the entire subcostal cell infuscated and a black spot at tip of wing; halteres yellow; plumula absent.

Length 6 mm.; wing 5 mm.

Type locality.—Rurrenabaque, Beni, Bolivia (November 1921, W. M. Mann, Mulford Biological Expedition).

Type.—Cat. No. 28756, U.S.N.M.

This pretty little species is named after my wife, Elnora S. Shannon.

ALLOGRAPTA PIURANA, new species

Female.—Resembles *A. hortensis* Philippi in having the distinct shining black stripe extending from oral margin upwards to the hind occipital margin. Differs in having a distinct light yellow spot on metapleura, hind margin of scutellum black; the spots on the second tergite directed obliquely backwards and those on the remaining segments nearly parallel to each other. (Fig. 4.)

Length 7 mm.; wing 5 mm.

Type locality.—Department Piura, Peru (January 11, C. H. T. Townsend).

Type.—Cat. No. 28757, U.S.N.M.

Genus BACCHA Fabricius

PELECINOBACCHA, new subgenus

Subgenotype.—*Baccha* (*Pelecinobaccha*) *peruviana*, new species.

Belongs to the genus *Baccha* but may be readily separated by the extraordinary elongate and slender abdomen of the female, which is cylindrical and nearly twice the length of the wing (17.5:10.5) and consists of six visible segments, all of equal length (except the first). The last segment, however, must be part of the usually retracted and very small first joint of the ovipositor. Differs from the preceding segments in being composed of a single band of chitin without any sternal sclerite, or even a suture on the ventral side. Post angular section of cross vein is shorter than posterior cross vein; alula well developed.

The male shows no unusual type of abdominal modification.

BACCHA (PELECINOBACCHA) PERUVIANA, new species

Fairly large, blackish to brownish species, the wings infuscated except on outer third.

Male.—Head large; ocelli well advanced of hind occipital margin; frontal triangle large, blackish with dark pile; frontal lunule large, semicircular; face fairly broad, narrowing gradually downward; sides of face yellowish; remainder brownish; tubercle well developed; lower margin of eye separated from oral margin by less than one-half of the width of third antennal joint; thorax brownish, humeri, post alar calli and scutellum faintly tinged with yellow; legs brownish (hind legs lacking); abdomen elongate, gradually tapered; segments two, three, and four of equal length.

Female.—Front narrow at vertex, the width less than length of arista; ocelli remote from hind occipital margin; front above antennae broad as in male; hind legs blackish, the basal three-fourths of hind tarsi black, remainder of tarsus pale yellow; wings infuscated, nearly hyaline on posterior border and apical fourth of wing.

Length of male 14.5 mm.; of female 24.5 mm.; wing 10.5 mm.

Type locality.—Chauchamayo, Peru (W. F. H. Rosenberg).

Type.—Cat. No. 28761, U.S.N.M.

Female type, male allotype, one female paratype.

This species bears a superficial resemblance to *Pelecinus polyturata* (Hymenoptera) in which the female has a remarkably long and slender abdomen and the male has a clubbed abdomen.

BACCHA (BACCHA) MICROPELECINA, new species

Female.—Resembles *Baccha* (*Pelecinobaccha*) *peruviana* in having an elongate abdomen, nearly twice the length of the wing (9:5), but the fifth and sixth segments, while well developed, are much shorter

than the preceding segments and broader, giving the abdomen a subspatulate form. The fifth sternite is subquadrate; the sixth segment is a continuous cylinder of chitin without sutures. It differs further in having the alula greatly reduced. Therefore, the species is not placed in the same subgenus, *Pelecinobaccha*.

Head dark aeneous; frontal lunule large and rugose; antennae rather small, brown; facial tubercle well developed; face moderately narrowed, nearly parallel-sided; mesonotum bluish aeneous with three longitudinal vittae; fore and mid femora and tibiae yellow, the tarsi blackened; hind femur with a dark preapical ring; hind tibia yellow basally, black beyond, the tarsus black; abdomen dark; an interrupted yellow band beyond middle of second tergite; third and fourth tergites yellowish basally; wings hyaline, except narrowly on anterior border as far as tip of first vein; distal section of apical cross vein shorter than posterior cross vein; squamae greatly reduced. Length, 11.5 mm.; wing, 5 mm.

One specimen.

Type locality.—Tumupasa, Bolivia (December, 1921, W. M. Mann, Mulford Biological Expedition, 1921–22).

Type.—Cat. No. 28760, U.S.N.M.

BACCHA (BACCHA) PUNCTATA, new species

Male.—This is a well-marked species, closely allied to *hirta* (the following species) but lacks the long vestiture. Blackish species, frontal triangle very large, higher than broad, the upper half opaque black with a pair of silvery pollinose spots, lower portion bluish aeneous; lower margin of eye narrowly separated from oral margin; legs entirely black; mesonotum opaque black with several aeneous longitudinal vittae; first tergite aeneous, the second aeneous with a large triangular and opaque preapical mark which contains a pair of yellow dots; disk of third, fourth, and fifth tergites opaque black and each with four yellow dots; wings infuscated basally, hyaline apically; squamae, squamal cilia and plumula dark brown.

Length 12 mm.; wing 9.5 mm.

One specimen.

Type locality.—San Antonio, Beni, Bolivia (November, 1921, W. M. Mann, Mulford Biological Expedition).

Type.—Cat. No. 28758, U.S.N.M.

BACCHA (BACCHA) HIRTA, new species

Male.—An easily recognized species because of its unusually long, stiff, erect, and black vestiture, a unique character in this genus. Head black; frontal lunule large, with a pair of reddish brown spots, one above each antenna; frontal triangle large, face fairly broad, but little converging downward; eyes narrowly separated

from oral margin; thorax black, with black erect hairs; fore and mid legs brownish; mid femora rather long pilose; hind legs black, the second and third joints yellowish, the femur and tibia clothed with black, shaggy hair; abdomen spatulate, black; first tergite with long black hairs; second tergite bluish aeneous, an opaque black band beyond middle; third and fourth tergites with aeneous cross-bands on fore and hind margins; distal section of apical cross vein longer than posterior cross vein; alula unusually large; bases of wings infuscated; squamae dark with dark cilia; length 9 mm.; wing 7 mm.

Type locality.—Ivon, Beni, Bolivia (February, 1922, W. M. Mann, Mulford Biological Expedition).

Type.—Cat. No. 28759, U.S.N.M.

Subfamily CHILOSINAE

ALIPUMILIO, new genus

Genotype.—Alipumilio femoratus, new species.

A very unusual type of Syrphidae allied to *Psilota* and the Chrysogasterini. Disproportionately short and thick in appearance, body entirely black and finely punctated, clothed everywhere with microscopic pile except on parts of abdomen. Head large, subcircular in outline (frontal aspect); eyes very densely and very short pilose, and very large, their hind margins forming the hind margins of the head, the occipital region being crowded out except for a small portion at vertex; front very long and narrow, widening downward, finely punctate; ocelli placed very close to hind occipital margin; antennae fairly large, placed below middle of head; face narrow, slightly converging downward, deeply and evenly concaved between antennae and oral margin; head set solidly against the thorax; the humeral callus flattened into a single plane which is frontal and is hidden by the head; no pile perceptible on the callus; prosternum more than twice as broad as long; anterior thoracic spiracle on cephalic aspect of thorax; mesonotum much broader than long; scutellum broad, hind margin flattened into a thin edge; hind femur very large, spinose beneath, spurious vein absent; apical cross vein with angle placed at middle, upper portion directed somewhat basad; plumula well developed. (Figs. 1, 2, and 3.)

ALIPUMILIO FEMORATUS, new species

Female.—Antenna brownish; third joint nearly twice as long as broad, in width two-thirds as wide as the front at vertex; lower part of face bluish; anterior oral margin light yellow; legs black, tips of tibiae and tarsi reddish yellow; tarsi unusually short and rather thick; hind tibia arcuate; abdomen with bright yellow tomentum

on sides of second tergite, on sides and through the middle of third tergite, and on entire surface of fourth and fifth (?) tergites; wings faintly smoky; spurious vein absent; squamae white with long, branched cilia; plumula present. Length 7 mm.; wing 5.5 mm.

One female.

Type locality.—Amazon (1866, H. W. Bates).

Type.—In British Museum.

HALICTOMYIA, new genus

Genotype.—Halictomyia boliviensis, new species.

Belongs to the tribe Chrysogasterini. Eyes pilose; front and face entirely shining black and pale pilose; occiput swollen; antennal pits separated; antennae elongate, extending a little below oral margin; third joint one and one-half times length of the basal two; arista shorter than third joint; face with a slight median tubercle; oral margin of very nearly even contour, with a slight and very broad frontal emargination; legs unusually long pilose (for this group); post angular section of apical cross vein directed straight upward for more than one-half its length, then outward; posterior cross vein very short and joining fourth vein, at nearly right angles, being slightly directed inward. (Fig. 6.)

The genus partakes of some of the characters of the Microdontinae.

HALICTOMYIA BOLIVIENSIS, new species

Female.—Rather small, entirely dark aeneous species, with an appearance similar to that of certain bees of the genus *Halictus*. Eye densely but very short pilose, a nearly bare transverse stripe on upper third; ocellar pile black, remainder of pile on front and face pale, downy in appearance; face converging slightly downward; tubercle inconspicuous; lower margin of eye separated by less than the width of third antennal joint; mesonotum entirely dark aeneous, pale pilose; all femora dark aeneous, apices yellowish brown; fore and mid tibia yellow brown, black pilose; first three joints of fore and mid tarsi whitish, the fourth and fifth joints blackish; hind femur rather swollen, pale pilose; hind tibia and basal three-fourths of basitarsus black, with rather long and erect black hairs; apex of basitarsus and second and third joints whitish with pale pile; last two joints blackish; abdomen pale pilose, shining bluish aeneous; hind margins of second and third tergites opaque black; wings hyaline, a faint clouding in the middle; squamae, halteres and plumula whitish, the latter well developed. Length, 6 mm.; wing, 4.5 mm.

One female.

Type locality.—Cavinas, Beni, Bolivia (W. M. Mann, Mulford Biological Expedition, 1921–1922).

Type.—Cat. No. 28762, U.S.N.M.

EUMYIOLEPTA BRAZILIANA, new species

Male.—A rather small dark species with scalelike vestiture only on the thorax. Eyes contiguous; ocellar triangle small, shining black; frontal triangle shining brown, bordered with silvery pollen; antennae moderate, reddish yellow; arista darker; face tuberculate, a median longitudinal shining stripe; sides silvery pollinose, jowls shining; thorax dark brown, the scales sparse, whitish; legs yellowish brown, all the femora spinose beneath; abdomen dark brown, second and third tergites each with a pair of brownish lateral spots; wings subhyaline, a faint cloud on anterior border near the apex; apical cross vein twice angled with short spurs at the apices of the angles; posterior cross vein with an inward angle at its middle, which is also spurred; petiole beyond anal cell unusually long, nearly equal to the section of fifth vein preceding it; spurious vein absent; halteres bright yellow; plumula present. Length, 5 mm.; wing, 5 mm.

One specimen.

Type locality.—Theresopolis, Brazil (November 30, 1887).

Type—In British Museum.

Subfamily ERISTALINAE

Genus QUICHUANA Knab

Quichuana KNAB, Ins. Ins. Mens., vol. 1, 1913, p. 13.—SHANNON, Proc. Ent. Soc. Wash., vol. 27, 1925, p. 111.

Genotype.—Quichuana sylvicola Knab.

The genus *Quichuana* was erected by Knab to contain two new species of Neotropical Syrphidae. Knab also stated his belief that *?Mallota championi* Williston belonged here too.

Later investigations indicate that this genus is a natural and fairly large one and apparently confined to the neotropic region. The writer early in 1925 described two new species and during the summer of the same year saw five additional species, including *?Mallota championi* Williston, in various European collections. Each of these five species has been described under a different generic name.

A list of the species is here appended together with some of the outstanding characteristics. Most of these species are very closely related, and in order to work out a synoptic key for them one should have specimens at hand.

Quichuana sylvicola KNAB, Ins. Ins. Mens., vol. 1, 1913, p. 14 (type in U.S.N.M.).

Quichuana picadoi KNAB, Ins. Ins. Mens., vol. 1, 1913, p. 14 (In U.S.N.M.).

Quichuana inca SHANNON, Proc. Ent. Soc. Wash., vol. 27, 1925, p. 111 (In U.S.N.M.).

Quichuana calathea SHANNON, Proc. Ent. Soc. Wash., vol. 27, 1925, p. 111 (In U.S.N.M.).

Quichuana knabi, new species, described below. (In U.S.N.M.)

(*Xylota*) *Quichuana subcostalis* (WALKER), Trans. Ent. Soc. London, n. ser, vol. 5, 1860, p. 291, Mexico (In British Museum).

(*Platynochaetus*) *Quichuana niger* (Giglio-Tos) BOLLET, Mus. Zool. ed Anat. Comp., Torino, vol. 7, 1892, p. 6, Mexico (In Museo Storia Natural, Torino, Italy).

Antennal joints 1:1.5:4; abdomen black, basal segment yellow pilose. This species may prove to be a synonym of the above.

(*Merodon*) *Quichuana angustiventris* (MACQUART), Dipt. Exot., suppl. 5, 1855, p. 90, South America (Brazil?) (In Museum d'Histoire Naturelle, Paris).

A beautiful species, remarkable for the very large and bright golden pilose frontal triangle in the male.

(*Helophilus*) *Quichuana auratus* (WALKER), Trans. Ent. Soc. London, n. ser. 4, 1857, p. 153. Amazon? (In British Museum).

(*Merodon*) = *Quichuana angustiventris* (Macquart).

QUICHUANA KNABI, new species

Female.—Very similar to *Q. calethea* Shannon from Panama, but differs in having the antennal joints 1:2:4, the arista equal to length of antenna. In *calethea* the antennal joints are 1:1.5:3.5, the arista longer than length of antenna; legs more extensively reddish yellow, base and apex of hind femur reddish yellow, remainder darkened; entire anterior border of wing infuscated, incompletely infuscated in *calathea.*

Length 11 mm.; wing 8 mm.

Type locality.—Cavinas, Beni, Bolivia (January, 1922, W. M. Mann, Mulford Biological Expedition).

Type.—Cat. No. 28763, U.S.N.M.

Genus HABROMYIA Williston

Habromyia WILLISTON, Trans. Amer. Ent. Soc. Phila., vol. 15, 1888, p. 284.

Genotype.—Habromyia coeruleithorax Williston (Trans. Amer. Ent. Soc. Phila., vol. 15, 1888, p. 284).

Two species of this genus are at hand, one of them apparently conspecific with the genotype. The genus may be separated from *Mallota* by its elongate and nearly bare body, head broader than thorax, eyes of male narrowly separated, eyes bare; third vein deeply looped; first submarginal cell open; anterior border of wing infuscated, posterior half hyaline.

HABROMYIA COERULEITHORAX Williston

The genotype *coeruleithorax* has the head and thorax black, a yellow spot above antennae.

HABROMYIA FLAVIFACIES, new species

Male and *female.*—Easily separated from *coeruleithorax* by having the front, face, and antennae bright yellow in the male, brownish

yellow in the female, the antenna and arista reddish yellow; scutellum yellowish, anterior margin narrowly black; sides of first tergite yellow; infuscation of the wing not extending beyond fourth vein except in second subbasal cell but this is only partially infuscated; apical portion of infuscation yellowish. In the genotype the brown borders the fifth vein behind to the base of the last posterior cell, and extends thence to the posterior angle of the first posterior cell, filling out this cell.

One male, one female.

Type locality.—Amazon (H. W. Bates).

Type.—Male, allotype, female. In British Museum.

MALLOTA INVERSA, new species

Female.—A typical species of *Mallota* with pilose eyes. Frons black pilose, rather broad, opaque brown, lower portion shining black; antennae dark brown; face broad, concave between antennae and facial tubercle which is moderate; sides of face with long, sparse pile; anterior half of mesonotum with black and yellow pile intermixed, posterior half and scutellum black pilose, a few yellow hairs on hind margin of scutellum; legs dark brown, tarsi paler; hind femur moderately enlarged with long dark pile; hind tibia arcuate with closely appressed black pile along hind margin; second and the basal half of third tergites reddish yellow pilose; apical half of third black pilose, the fourth and fifth tergites yellow pilose; wings with the veins broadly infuscated except at apex of wing, remainder of wing hyaline; squamae and squamal cilia black. Length 17 mm.; wing 13 mm.

Mallota colombii Macquart has the thoracic dorsum red pilose, the first three abdominal segments black pilose and the fourth and fifth red pilose. In *M. analis* Macquart, the thoracic dorsum is entirely yellowish pilose and the abdomen is largely yellowish pilose.

Two females.

Type locality.—Chanchamayo, Peru (W. F. H. Rosenberg). Also Piches and Perene, Peru, 2,000–3,000 feet. (Soc. Georg de Lima.)

Type.—Cat. No. 28764, U.S.N.M.

MALLOTA NIGRA, new species

Female.—An almost entirely black species differing from *inversa* in having the thoracic dorsum black pilose save for a few yellow hairs on anterior margin and hind margin of scutellum; legs black, all femora with long, rather dense, black pile; abdomen black pilose on first, second and basal half of third segment; remainder of adbomen with sparse yellow hairs; wings infuscated, very faintly so at apex and on posterior margin; length 12 mm.; wing 10 mm.

One female.

Type locality.—Santa Inéz, Ecuador (R. Haensch).
Type.—In British Museum.

MALLOTA ABERRANS, new species

This is not a typical species of *Mallota* but it seems to possess no characters of sufficient importance to make a separate genus for it. It may be easily recognized by its rather short yellowish pile and a pair of pale transverse spots on the second tergite.

Female.—Head rather broad and flat; eyes bare; front clothed with yellow and black pile: antenna normal, brownish; arista yellowish; face shining black, deeply concave, tubercle prominent; face bluntly produced downward, the sides with pale pollen and pile; thorax with black and yellow pile intermixed, the yellow predominant; bases of femora yellow becoming brownish beyond; apex of hind femur yellow: hind femur moderately swollen with spines and black bristly hairs beneath: tibiae yellowish brown, tarsi brownish; abdomen dark in ground color, clothed with reddish yellow pile; a pair of transverse pale spots on second tergite: wings subhyaline with a faint cloud in middle. Length 11.5 mm.: wing 9.5 mm.

One specimen.

Type locality.—Paltaybamba, 5,000 feet, Peru (August 27, 1911, Yale Peruvian Expedition).

Type.—Cat. No. 28788, U.S.N.M.

Subfamily MICRODONTINAE

The Microdontinae of the American tropics seem to have almost unlimited variation in form and color and this, combined with the large number of species occurring in this region, makes the group a very perplexing one.

There are numerous structural differences in the group, seemingly well fitted for generic uses, and at first consideration it would appear that the genus *Microdon* (to which most of the species of the subfamily belong) is a complex one that should be divided into several. The characters, however, do not lend themselves to this purpose as they do not include natural groups and frequently they appear to be of only specific importance, or are shared in common only by a few closely allied species.

One small group (about ten species) possesses a type of habitus which is so similar to the appearance of the stingless honey bees (*Trigona*) of the American tropics that they may easily be mistaken for them at first sight. But aside from the habitus, they seem to have no structural character in common by which they might be considered a distinct genus.

Walker[3] erected the genus *Ubristes* for one of the species which he described as *flavitibia*, and it is here proposed to use this name in the subgeneric sense for this group of species.

Subgenus UBRISTES Walker.

Ubristes WALKER, Insecta Saunders, Dipt. vol. 1, 1852, p. 217.

Genotype.—Ubristes flavitibia Walker.

A group remarkable for its similarity in appearance to the stingless honey bees, of the genus *Trigona*. Rather small and compact, ranging in color from entirely black to almost entirely yellow; face usually narrow; third longitudinal vein with or without an appendix; abdomen broad basally, usually contracting apically; hind legs usually hairy; eyes thinly and shortly pilose.

Walker described only the one species, *flavitibia*, although the other species here recorded (from the British Museum) were evidently before him at the time. As far as I am aware the other species are all new and are here described.

Two species, *Microdon wheeleri* Mann and *M. micromidas* Shannon described from Panama, also belong to this group.

KEY TO BRAZILIAN SPECIES OF THE SUBGENUS UBRISTES

1. Thorax and abdomen entirely black 2
   More or less yellow present 4
2. Abdomen "spindle shaped," very slightly narrowed beyond the middle; fairly large species, 10 mm.; legs very hairy ..... flavitibia Walker.
   Abdomen tapering toward the apex to a blunt point; rather small species, 7 mm.; legs moderately hairy 3
3. Three visible abdominal segments; wing with preapical white stripe. ..... lacteipennis, new species.
   Four visible segments, the fourth distinctly longer than the third; wings uniformly infuscated ..... trigoniformis, new species.
4. Abdomen ovate with two pairs of large yellow spots; scutellum produced into a point, triangular in shape ..... scutellaris, new species.
   Abdomen constricted behind second tergite; scutellum rounded on hind margin 5
5. Third vein with an appendix, wing uniformly infuscated. ..... fraudator, new species.
   Third vein without an appendix, a broad, whitish preapical crossband on wing ..... goettei, new species.

MICRODON (UBRISTES) LACTEIPENNIS, new species

Male.—A rather small, blackish species, with eyes fairly approximated above antennae; ocelli closely grouped and centrally placed upon the upper portion of front (=ocellar) triangle; first antennal joint about twice as long as broad, second equals one-half length of first, and the third is twice as long as the first; face black, narrowly yellowish on sides next to border of eyes; face narrow,

[3] Insecta Saunders, Dipt., vol 1, 1852, p. 217.

about three times as long as broad; eyes large, the lower margins bordering onto oral margins; dorsum of thorax smaller than head, frontal aspect; thorax black pilose; legs black, with black pile, the terminal tarsal joints all yellowish; hind tibia rather slender, with a very faint dorsal incision, moderately pilose; hind tarsus thickened; abdomen shining black with three visible segments; the third more than half the abdominal length, with the sides deflected downward so that the abdomen tapers toward the apex; hypopygium small; wings infuscated with a white crossband just beyond middle; halteres black, squamae reduced, black ciliated. Length, 6 mm.; wing, 5 mm.

Two males.

Type locality.—Amazon (1866, H. W. Bates).

Type.—In British Museum.

This species closely resembles *Trigona lacteipennis* Friese.

MICRODON (UBRISTES) TRIGONIFORMIS, new species

Male.—Similar to *lacteipennis*, but the first antennal joint is equal to the third; the wings are uniformly infuscated; hind tibia much larger and with a distinct dorsal incision beyond middle; four abdominal segments present, the fourth nearly as long as the basal three; angle in the apical cross vein a little more than a right angle, the distal portion directed somewhat inward; abdomen with four visible tergites, greatly narrowed behind the second segment owing to the turning downward and under of the sides of the third and fourth segments; fourth tergite as long as the combined length of the second and third (measured along median line); squamae reduced, blackish; halteres blackish. Length, 7.5 mm.; wing, 5.5 mm.

One male.

Type locality.—Villa Nova, Brazil (H. W. Bates).

Type.—In British Museum.

MICRODON (UBRISTES) GOETTEI, new species

Female.—General color brownish yellow with dark markings. Front a little broader than long, upper three-fourths inflated; antennae yellowish brown, slightly longer than fore tibia, first joint nearly three times as long as broad, the second about one-fourth length of first, third a little longer than combined length of first and second; arista as long as first; face nearly parallel sided, about twice as long as broad; fore and mid legs yellowish, hind legs darker, hind tibia as in *trigoniformis*; abdomen with sides behind second tergite but little turned under (probably distinctly so in the male); wings subhyaline, a broad whitish preapical band present; dorsum of thorax reddish brown, the disc blackish. Length, 9.5 mm.; wing, 7 mm.

Five females.

Type locality.—Amazon (H. W. Bates). Also from Ega and Para, Brazil (H. W. Bates).

Type.—In British Museum.

This species closely resembles *Trigona goettei* Friese.

MICRODON (UBRISTES) FRAUDATOR, new species

Male.—Very similar to *goettei* in coloration and to *trigoniformis* in structure. Antennal joints 1:0.25:1; face and front broader than in *trigoniformis;* fore and mid legs yellow, tarsal joints 1, 2, and 3 dark brown; hind femur yellowish, tibia and first three tarsal joints dark brown, dorsal incision on tibia not as pronounced as in *trigoniformis*; abdomen as in *trigoniformis;* wings subhyaline, no whitish stripe. Length, 8.5 mm.; wing, 6 mm.

One male.

Type locality.—Amazon (H. W. Bates).

Type.—In British Museum.

MICRODON (UBRISTES) SCUTELLARIS, new species

Female.—Differs considerably from the other species of this subgenus in having the abdomen broadly ovate and the scutellum produced apically and triangular in shape. Head black, front and face unsually narrow, front nearly three times as long as broad, ocellar region protuberant; antennal joints 1:0.25:1; arista shorter than third joint; face narrowed downward, pale pilose, the sides whitish pollinose; thorax dark brown, dark pilose; all the legs dark brown, the apical tarsal joints yellowish; hind femur and tibia rather slender, long dark pilose, the dorsal incision of tibia broad and rather shallow; hind metatarsus of much larger girth than either femur or tibia; abdomen brownish, the sides narrowly yellow, second and third tergites each with a large pair of yellow spots; fifth tergite well developed, yellow, with a median, longitudinal, dark stripe; wings large, slightly infuscated, with a median, rather faint, whitish cross stripe. Length 7.5 mm.; wing 8 mm.

One female.

Type locality.—Amazon (H. W. Bates).

Type.—In British Museum.

MICRODON SCOLOPUS, new species

Male.—This species may be readily recognized by the presence of a well developed tooth-like process at the base of each basitarsus. In general appearance similar to certain species of the subgenus *Ubristes*, but the hind legs lack the long pilosity which characterizes this group. Eye margins parallel, the front and face less than one-third the width of the head; front dark, ocellar region protuberant;

antenna reddish brown, the joints are 1:0.25:2.25, arista one-third the length of third joint; face darkened, the sides yellowish; thorax dark brown, scutellum, except base, yellowish, hind margin with an indentation; legs dark, fore and mid tarsi yellowish; abdomen broadly ovate; wings subhyaline. Length 7 mm.; wing 7 mm.

One male.

Type locality.—Amazon (H. W. Bates).

Type.—In British Museum.

MICRODON MACULATUS, new species

Female.—Medium sized, yellowish with dark thoracic and wing markings; head subhemispherical; front and face moderately narrow, yellow, with a small dark spot at ocelli; antennae inserted above the middle of head; first joint about six times as long as broad, four times longer than the second and twice as long as third; arista longer than third joint; lower margin of eye bordering onto oral margin; mesonotum yellow, maculated with dark brown, the apical half almost entirely dark brown, a pair of narrow anterior stripes and a pair of lateral spots on basal half; meso-hypopteno and metapleurae more or less darkened; scutellum small with a small emargination at middle of hind margin; four fore legs lacking; hind legs yellow, femur slender, tibia enlarged, basitarsus moderately enlarged; abdomen narrowly globose, yellow, a darkened median longitudinal stripe and an incomplete lateral one; wing rather large; subhyaline with a broad dark stripe across middle and another preapical stripe, anterior margin of wing between the dark stripes yellowish. Length 9 mm.; wing 9 mm.

One female.

Type locality.—Provincia Sara, Santa Cruz de la Sierra, Bolivia (February-April, 1904, J. Steinbach).

Type.—In British Museum.

MICRODON NIGRISPINOSUS, new species

Male.—An elongate, rather yellowish species with dark brown markings; hind femur yellow with a dense set of small black spines beneath. Ocellar region strongly protuberant, dark, front very slightly contracted above antennae; antenna dark brown, relative length of joints 1:0.25:0.75; arista two-thirds the length of third joint; face yellow, yellow pilose; mesonotum yellowish, the disk largely brownish; scutellum small with an apical pair of small spines; legs yellowish, tarsi brownish; bases of fore and mid femora on inner side with a conspicuous patch of minute reddish brown bristles; hind femur swollen, with numerous small black spines on lower side of apical two-thirds; tibia distinctly more slender than

femur; abdomen yellowish, brownish apically, elongate, second segment nearly twice as long as wide, third and fourth segments more globose; wings subhyaline; third vein with spur. Length 12 mm.; wing 10 mm.

Three males.

Type locality.—Ega, Brazil (H. W. Bates). Also Tapayos, Brazil (H. W. Bates).

Type.—In British Museum.

MICRODON BATESI, new species

Female.—Very close to *Microdon nigrispinosus*, differs as follows: Front entirely dark; antennae more elongate, the joints being 1 : 0.25 : 1; base of first joint yellowish; face somewhat broader, more protuberant below; thorax darkened, humeri yellowish; scutellum with a purplish reflection and without spines; hind femur with comparatively few black spines beneath; abdomen clavate, second segment nearly four times as long as broad, remaining part of abdomen somewhat globose, dark brown, hind margin of third tergite yellow; wings subhyaline, infuscated along third vein. Length 13 mm.; wing 10 mm.

One female.

Type locality.—Amazon, Brazil (H. W. Bates).

Type.—In British Museum.

This specimen bears the label "A very interesting new genus. S. W. W."-[-S. W. Williston]. As it does not differ from the genus *Microdon* in any other respect, and as a constricted abdomen is possessed by other species of *Microdon*, the species had best remain in this genus.

NOTES AND DESCRIPTIONS OF SPECIES FROM CHILE

The Diptera of Chile were given considerable attention from 1834 to 1888 by a number of the foremost dipterologists of that period. Chief among them were Macquart, who described a large number of new species in his four volumes of the Diptera Exotica; Blanchard, who contributed the section on Diptera for the Gay Historia de Chile, Zoologia [4]; R. A. Philippi, who published the Aufzählung der Chilenischen Diptera [5]; and finally E. C. Reed, who published the Catalogo de los Insectos Dipteres de Chile.[6]

Several other dipterists, Wiedemann, Schiner, Van der Wulp, Bigot, and Lynch-Arribalzaga, made minor or incidental contributions during this same period.

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[4] Vol. 7, 1852, pp. 327–468.

[5] Verhandlungen der Zoologisch-Botanischen Gesellschaft, Wien, vol. 15, 1865, pp. 595–782.

[6] Anales de la Universidad de Chile, Santiago, vol. 73, 1888, pp. 271–316.

Very little has been written on the Chilean Diptera since that time and until recently (as far as the writer is aware) very little collecting has been done.

During the past few years Señor A. Faz has been making a study of the Diptera of this region and has sent material to the United States National Museum for identification. This material, supplemented by a small collection received years ago from Reed, as well as a small lot of specimens loaned by the British Museum and a few specimens from other sources, is the basis for the present small contribution to the Chilean Syrphidae and also for part of another paper, by the writer on the American Xylotini, which has been recently published.[7]

Dr. J. M. Aldrich has attempted to learn the condition of the collection which was used by Philippi as the basis for his publication but with negative results.

MELANOSTOMA FENESTRATUM (Macquart)

Syrphus fenestratum MACQUART, Dipt. Exot., vol. 2, 1842, p. 103.
Melanostoma punctulatum V. d. WULP, Tijdschr. v. Entomol., vol 31, 1888, p. 375.

Male and *female*.—This species has been considered a synonym of *stegnum* Say. They are very closely allied but certain differences are present which serve to distinguish them as two species.

The male of *fenestratum* has smaller and entirely black antennae: the face widens downward; the legs darker; the aeneous spots on the fourth segment less than a third the length of the segment and isolated. In *stegnum* the third joint is reddish brown, the face parallel sided and the aeneous spots on the fourth tergite occupy half of the segment and are connected together and to the aeneous hind margin of the segment by a longitudinal aeneous stripe.

In the female *stegnum* the front is broader and the antennae more brightly colored than in *fenestratum* and the aeneous markings on the fourth segment are, in each case, in agreement with those found in their respective males.

One male, five females.

Chile: Santiago, October 9, 1921, (A. Faz); Angol, May 23, 1925.

Genus MESOGRAMMA Loew

Mesogramma LOEW, Berlin Ent. Zeitschr., vol. 9, 1865, p. 157.

Only two species of this genus, hitherto considered under the genus *Syrphus*, are known from Chile.

[7] Proc. U. S. Nat. Mus., vol. 69, no. 2635, 1926, pp. 1–52.

MESOGRAMMA PHILIPPI, new name

Syrphus interruptus PHILIPPI, Verh. Zool.-bot. Ges. Wien., vol. 15, 1865, p. 747. (Name preoccupied by *Syrphus interruptus* Gmelin, 1792).

Male.—A species easily recognized, within the genus, by its peculiar abdominal yellow markings. The usual transverse yellow bands are reduced to a pair of submedian yellow spots on each segment which may be joined by slender connections to the yellow lateral abdominal margins.

One specimen.

Perales, Chile, September 23 (A. Faz).

MESOGRAMMA CALCEOLATUS (Macquart)

Syrphus calceolatus MACQUART, Dipt. Exot., vol. 2, 1842, p. 9.

The yellow crossbands extend completely across tergites two, three, four, and five and join the yellow lateral margins of the abdomen.

One male, five females.

Santiago, Chile, 1924 (A. Faz).

Genus ALLOGRAPTA Osten Sacken

Allograpta OSTEN SACKEN, Bull. Buffalo Soc. Nat. Hist., vol. 3, 1876, p. 49.

Two species are at hand which belong to the difficult *Mesogramma-Allograpta-Sphaerophoria* group, in which the generic limits are very poorly defined. The species at hand are apparently more closely related to the genotype of *Allograpta, obliqua* Say, than to the genotypes of the other two genera and are therefore here considered under *Allograpta.* In fact F. Lynch-Arribalzaga has already placed one of them in this genus.

ALLOGRAPTA HORTENSIS (Philippi)

Syrphus hortensis PHILIPPI, Verh. Zool.-bot. Ges. Wien, vol. 15, 1865, p. 746.

A female specimen at hand agrees very satisfactorily with Philippi's description. A shining bronzy black stripe of uniform width extends from the anterior oral margin upwards through the base of the antenna and clear to the vertex, where it widens out and joins the eye margins; jowl yellow with a black spot extending from the middle of the oral margin to the eye; mesonotum bronzy black, a yellow stripe on the side extending from the anterior corner to the root of the wing; post alar callus and scutellum yellow; meso- and sternopleurae with a yellow spot; metapleura very obscurely yellow; legs mostly yellow, the tarsi, apical half of hind femur, and hind tibia brownish, a pale ring at the middle of the tibia; apical corners of abdomen yellow; a broadly interrupted yellow crossband midway of the second tergite, which is parallel to the fore and hind margins of the tergite; third, fourth, and fifth tergites each with a pair of

oblique yellow spots directed outward and backwards. Length 7 mm.; wing 5 mm.

Chile: Santiago (A. Faz).

ALLOGGRAPTA PULCHRA, new species

Female.—This species is easily separated from *hortensis* by the much less developed stripe extending from the anterior oral margin to the vertex; it is suddenly narrowed at the antenna, being less than one-half the width below the antenna than above; no black spot on jowl; metapleura (pleurotergite) extensively yellow; the yellow markings on the abdomen much larger, the spots on the second tergite usually narrowly confluent; those on the third tergite connected and forming a broad cross band which extends over the sides; the fourth and fifth tergites each with a pair of oblique spots which extend over the sides. Length 6.5 mm.; wing 5 mm.

Male.—Ocellar triangle aeneous black; frontal triangle entirely yellow; facial stripe narrow, sometimes greatly reduced; upper eye facets moderately enlarged.

Eight males, seven females.

Type locality.—Anglo, Chile (February 21, 1924, D. S. Bullock).

Type.—Male, Cat. No. 28745, U.S.N.M.

A male and female (Chile, E. C. Reed) were determined by Reed as *hortensis.*

FAZIA, new genus

Type.—Fazia bullaephora, new species.

Belongs to the tribe Syrphini. Differs from *Syrphus ribesii* Linnaeus (which is considered typical of the genus *Syrphus*) in having the oral margin anteriorly produced (figs. 7 and 8); the apical crossvein rather strongly recurrent (figs. 9 and 10); and the metasternum pilose. This last character is found in only two other genera of the Syrphinae (as far as I know), namely, *Asarina*, found in the Orient, and *Claraplumula. Asarina* is quite distinct from *Fazia. Claraplumula* is described in the preceding section of this paper.

The antennae are widely separated in *Fazia*, the lower squama is bare, and the sides of the abdomen are not marginated.

The genus is named for Sr. A. Faz, of Chile.

FAZIA BULLAEPHORA, new species

Female.—Upper half of front including vertex dark aeneous, lower half, save for a well-defined black region above antennae, yellow; entire front black pilose, width at vertex not as wide as the distance between the lateral margins of the antennal pits; antennal pits separated, antennae rather small, black; arista black, as long as length of antenna; face yellow, yellowish brown through the middle; tubercle prominent; oral margin produced in front and darkened;

on each side of the face is an inflated area, or bulla; mesonotum dark aeneous, the notoplural calli, the post alar calli and scutellum yellowish; legs, including bases of femora, yellowish brown, the tarsi darker; anterior corners of first tergite yellow; second, third, fourth, and fifth tergites each with a pair of conspicuous, large reddish yellow spots, not confluent with the lateral abdominal margins; sides of sixth tergite yellowish; dorsal addominal pile mostly black; venter yellowish with mostly pale pile; wings slightly infuscated. Length 11.5 mm.; wing 9.5 mm.

Seven females.

Type locality.—Chile (1922, A. Faz).

Type.—Cat. No. 28746, U.S.N.M.

Two specimens, labeled Chile, 1922, A. Faz, were determined as *Syrphus decemmaculata* Rondani (Aldrich); two having puparia mounted on the same pins and labeled Southern Chile, on *Lobelia constitucim* M. J. Rivera, were determined as *Syrphus sexmaculata* Macquart (Coquillett); two labeled Chile, E. C. Reed, also determined as *sexmaculata* (Reed); and one, labeled Chile, E. C. Reed, was determined as *Syrphus gayi* Blanchard (Reed).

The descriptions of these three species above mentioned all differ to some extent from the specimens before me and until the types have been examined, the best course to follow is to consider the present specimens as a new species and give it a definite name. Especially should this be the case as the following species is a very close ally to the present one.

FAZIA AUSTRALIS, new species

Male and *female.*—Differs from *bullaephora* in being somewhat smaller; the front of the female proportionately broader, being wider at the vertex than the width between the outside margins of the antennal pits; and more extensively yellow, no yellow mark above antennae; antennae smaller, the basal joints and arista reddish yellow, third joint brownish; face without a bulla on each side, distinctly more protruding, the lower margin of the head of greater length than the height (shorter in *bullaephora*); sides of mesonotum almost continuously yellow; scutellum yellow; legs yellowish, the tarsi darker; number and arrangement of the abdominal spots similar but spots somewhat larger; the abdomen more narrow. Length 10 mm.; wing 8.5 mm.

Type locality.—Chile (E. C. Reed).

Type.—Cat. No. 28747, U.S.N.M.

One male, type; one female, allotype.

These specimens were determined by Reed as *Syrphus similis* Blanchard. *S. similis* is far more likely to be allied to the species described below as *Syrphus reedi* than to *australis.*

SYRPHUS GAYI Macquart

Syrphus gayi MACQUART, Dipt. Exot., vol. 2, pt. 2, 1842, p. 90.

One male and three females (determined by Aldrich as this species) agree so closely with the description of *S. gayi* that it seems best to let them stand under this name. The only discrepancy between the specimens and the description lies in the color of the last abdominal segment. The description states that the last segment is black with the hind border yellow. In the present specimens the anterior corners of this segment are broadly yellow, this color continuing along the side margins to the hind margin, which is mainly black.

Male and *female*.—Front, both sexes, black aeneous; third antennal joint black; legs yellow, bases of femora black, the tarsi brownish; second, third, and fourth tergites each with a pair of very large, reddish yellow spots which extend over the sides of the abdomen; lower squamae pilose. This last character allies the species to the *ribesii* group of the genus *Syrphus*.

Four specimens, Santiago, Chile (A. Faz).

SYRPHUS REEDI, new species

Male and *female*.—Lower squamae pilose, therefore allied to the *ribesii* group. Ocellar triangle of male and vertex of female dark aeneous, the front light aeneous, with black pile; antenna moderate, reddish yellow below, brownish above; arista reddish brown; in the female the third joint is one and one-half times the width of the front across ocelli; face yellow, mostly pale pilose, the tubercle moderate, jowls also yellow; mesonotum greenish aeneous, the sides somewhat yellowish with yellow pile; legs yellow, the extreme bases of the femora dark brown to black; hind tarsi a little brownish; second tergite with a pair of large yellow spots which extend forward along the sides to the anterior corners of the first tergite; third and fourth tergites each with an anterior yellow tranverse stripe which extends over the sides of the abdomen in their full width; hind margins of the fourth and fifth tergites yellowish; wings slightly infuscated, more so anteriorly. Length 12 mm.; wing 11 mm.

This species resembles *S. ribesii* very closely. The antennae are distinctly smaller in *ribesii*, the femora of this species are more extensively black basally, in the male the hind femur is black on the basal half and the female has a median dark ring at the middle. Also the yellow stripes on the third and fourth tergites in *ribesii* are broader.

This species, *reedi*, may eventually prove to be *Syrphus similis* Blanchard, which is said to resemble *S. ribesii*. However, the de-

scription of *similis* states that the fourth and fifth abdominal segments are yellow. Immature specimens before me have these segments a diffuse yellowish brown, but well-colored specimens have the yellow stripes in strong contrast to the black of the rest of the tergites. Seven males, nine females.

Type locality.—Valparaiso, Chile (A. Faz).

Type.—Male, Cat. No. 28748, U.S.N.M.

Genus SCAEVA Fabricius

Scaeva FABRICIUS, Systema Antliat., 1805, p. 248.
Lasiopticus RONDANI, Nouv. Annal. Sci. Nat. Bologna, ser. 2, vol. 2, 1844, p. 459.
Catabomba OSTEN SACKEN, Bull. U. S. Geol. Surv., vol. 3, 1877, p. 325.

This genus, also widely known under the name of *Catabomba* and *Lasiopticus*, is represented in Chile by two species.

It appears quite certain that one of them is the same species as that described by Macquart under the name *Syrphus melanostoma*, especially as it is stated in the Fauna Chilena[8] to resemble *S. pyrastri* of Europe, differing by its more narrow form and the abdominal spots being less broad.

SCAEVA MELANOSTOMA (Macquart)

Syrphus melanostomus MACQUART, Dipt. Exot., vol 2, pt. 2, 1842, p. 87.
Syrphus latifacies MACQUART, Dipt. Exot., suppl. 4, 1849, p. 152.
Syrphus sexguttatus V. D. WULP, Tijdschr., v. Entomol., vol. 25, 1882, p. 135.

Male and *female.*—Eyes hairy; front and face very broad, inflated; ocellar triangle of male black aeneous and black pilose, the three sides equal in length; the frontal triangle as broad as the face, rather densely black pilose; in female the width of front across ocelli is greater than length of arista, the lower portion of the front as broad as the face; the front yellowish except for a shining black band extending between the eyes across the ocelli; antennae and arista dark brown, length of arista a little shorter than antenna; face moderately protruding below, the tubercle prominent and the anterior oral margin slightly projecting; face largely yellow, the jowls and the oral margin shining black, the tubercle brownish; a loose row of blackish hairs extending from base of antenna down close to the side of the face, remainder of pile pale and inconspicuous; mesonotum and disk of scutellum greenish aeneous, somewhat yellowish around the side and hind margins; clothed with pale loose pile; bases of fore and mid femora, all but the apex of hind femora, and the tarsi black, remainder of femora and tibiae yellowish; abdomen black, the second, third, and fourth tergites each

[8] Vol. 7, 1856, p. 410.

with a pair of yellow lunules which do not extend to the sides of the abdomen; hind margins of fourth and fifth tergites yellow, the fifth with a pair of small yellowish spots on anterior margin; wings glassy, almost entirely devoid of villosity; squamae whitish, disk of lower one bare. Length 13 mm.; wing 11 mm.

S. pyrastri differs in having the abdomen broader, and the abdominal spots larger and more arcuate.

The description of *melanostoma* states that the sides of the thorax are yellow. In the present species the sides are faintly yellow; otherwise the description fits the species before me.

Three males, eight females. Santiago, October 9, 1921 (A. Faz).

Chile: Santiago, Valparaiso (A. Faz).

Maipu, February 20, 1906 (F. V. Ibarro).

Southern Chile (M. J. Rivera).

Locality? (E. C. Reed).

SCAEVA OCCIDENTALIS, new species

Female.—Closely allied to *melanostoma*, but differs in having the front and face narrower; facial pile entirely pale; scutellum entirely yellowish; hind femur less extensively black, almost half of the apical half yellowish; tarsi more yellowish; the yellow abdominal spots distinctly larger and less arcuate, the black separating the spots in each pair narrower than the length of (front to back) the spots (in *melanostoma* the black separating the spots much broader than the length of the spots). Length 13 mm.; wing 10 mm.

This species can hardly be that described as *melanostoma* by Macquart, as the yellow abdominal spots are distinctly larger and more rotund than in *pyrastri*.

One specimen.

Type locality.—Santiago, Chile (A. Faz).

Type.—Cat. No. 28749, U.S.N.M.

Genus BACCHA Fabricius

Baccha FABRICIUS, Syst. Antliat., 1805, p. 199.

Six species of *Baccha* have been described from Chile. Three species are at hand, only one of which can be definitely connected with one of the six already described.

KEY TO THE CHILEAN SPECIES OF BACCHA AT HAND

1. Alula well developed; metasternum girdled with chitin; wings hyaline with a distinct spot ..... **conopida** Philippi.
   Alula absent; metasternum membranous behind; wings smoky 2
2. Lower margin of eye contiguous with oral margin; mesonotum entirely aeneous ..... **filiola**, new species.
   Lower margin of eye distinctly separated from oral margin; anterior lateral mesonotal margin yellow ..... **felix**, new species.

BACCHA CONOPIDA Philippi

Buccha conopida PHILIPPI, Verh. Zool.-bot. Ges. Wien, vol. 15, 1865, p. 750.

A species easily recognized by the brownish front and face bordered by a narrow yellow margin; the abbreviated yellow stripes at the anterior corners of the mesonotum; the yellow scutellum and the hyaline wings with a brown spot at the middle of the anterior margin.

Three males, one female.

Chile (E. C. Reed); Southern Chile (M. J. Rivera); Santiago, Chile (A. Faz); Valparaiso (A. Faz).

BACCHA FILIOLA, new species

Male.—Agrees with Philippi's description of *valdiviana*, except that this species is said to have the wing hyaline with three spots, while the present species has the wings entirely smoky and no spots. Frons black aeneous, very narrow; frontal triangle black aeneous, rugose; frontal lunule yellow with a central black spot above antennae; antennae small, brownish; face very narrow, the sides gently converging downward; lower eye margin bordering onto oral margin; thorax entirely dark aeneous, a pair of faint longitudinal pollinose stripes on mesonotum; pleurae with a faint reddish yellow tinge; legs yellowish brown, hind legs darker; abdomen extremely narrow at second and third tergites; tergites two and three each with two pairs of yellowish spots, the fourth with one pair; wings entirely smoky, unusually small, the discal crossvein nearly at middle of discal cell; alula and basal portion of axillary cell vestigial. Length 9 mm.; wing 5.5 mm.

Two males.

Type locality.—Valparaiso, Chile (A. Faz); also from Santiago, Chile (A. Faz).

Type.—Cat. No. 28751, U.S.N.M.

BACCHA FELIX, new species

The vestigial alula as well as the basal portion of the axillary cell allies this species to *filiola*. They are easily differentiated, *felix* is much larger, the antennae larger and more yellow; the face broadly yellow on the sides and below; the lower eye margin well separated from the oral margin; humeral and notopleura yellow; hind margin of scutellum yellow; pleurae largely yellow; fore and mid legs yellowish brown; hind legs dark brown; abdomen dark aeneous, side margins of first tergite and the anterior two-thirds of the second yellow; anterior corners of the third and fourth tergites yellow;

discal cross vein well before middle of discal cell; wings entirely smoky. Length 11 mm.; wing 9 mm.

Two males, one female.

Type locality.—Valparaiso, Chile (A. Faz); also from Santiago, Chile (A. Faz).

Type.—Male. Cat. No. 28750, U.S.N.M.

PENIUM TRISTE Philippi

Penium triste PHILIPPI, Verh. Zool.-bot. Ges. Wien, vol. 15, 1865, p. 741.

The species described by Bigot as *Chilosia aurantipes*, from Chile, may prove to be this species.

Male.—Entirely black; eyes hairy; face pilose, pale and black mixed: femora black; tibiae reddish yellow basally and apically, broadly black at the middle; fore and mid tarsi reddish brown; hind tarsi reddish yellow, becoming brown apically.

Originally described from Chile. One male at hand, Santiago, Chile (A. Faz).

VALDIVIA, new genus

Three specimens, two males and one female, representing three species are at hand which appear to belong to the same, evidently new, genus. All three are from Chile. A species described by Philippi as *Ocyptamus valdivianus* from the province of Valdivia may also belong to this genus.

Description of the genus.—Fairly large, elongate flies, related more or less to the tribe Sphegini of the Chilosinae. The males are dichoptic, the face is tuberculate and the abdomen is constricted basally. The female has the face concave and the abdomen of nearly uniform width, there being a slight, progressive narrowing towards the base. In both sexes the face is not pilose; the palpi are unusually long and slender; the venation is quite similar to the Chilosine type, except that the apical cross vein is twice angled; the alula is as broad as the second basal cell; the anal furrow is considerably reduced; the metasternum is bare and may be completely girdled with chitin or membranous behind.

Genotype.—*Valdivia darwini*, new species.

Named in commemoration of Pedro de Valdivia, the early Spanish explorer of Chile.

KEY TO SPECIES OF VALDIVIA

A¹. All the femora, tibiae, and tarsi entirely reddish yellow.
darwini, new species.

A². All the femora and tibiae extensively black.
B¹. Abdomen black ..... **nigra**, new species.
B². Abdomen reddish ..... **ruficauda**, new species.

VOLDIVIA DARWINI, new species

A species easily recognized by its reddish yellow legs; sides of mesonotum with a distinct gray pollinose border; strongly constricted abdomen; metasternum completely girdled with chitin and a rather small dark spot at the base of the subcostal cell.

Male.—Eyes fairly approximated, separated by a width equal to length of first antennal joint; antennae dark brown; third joint suborbicular; arista somewhat longer than length of antennae; face broadly covered with dense, yellowish pollen; tubercle moderate: mesonotum black, bordered on the sides and behind by a dense, grayish pollinose stripe; scutellum black; legs, except coxae and trochanters, reddish yellow; metasternum bare, girdled with chitin: hind femur with numerous black spines beneath; abdomen brownish, the extreme hind borders of second, third, and fourth tergites pale yellow; second segment rather elongated and strongly constricted on its basal two-thirds; hypopygium moderate; wings mostly hyaline, a dark spot at the base of subcostal cell, remainder of cell yellowish; a rather faint preapical cloud on anterior half of wing: squamae yellowish. Length 12.5 mm.; wing 9 mm.

Type locality.—Valdivia, Chile (Patagonia).

One specimen, collected by Charles Darwin.

Type.—In the British Museum of Natural History. Named for the illustrious naturalist, Charles Darwin, who collected the species while on the famous voyage of the *Beagle.*

VALDIVIA NIGRA, new species

Male.—Differs from *darwini* as follows: The eyes are somewhat more widely separated; the antennae black, the third joint distinctly larger and broader than long; arista black and distinctly heavier: face deeply concave below antennae, the tubercle more prominent; mesonotum with a very faint trace of pollen around the borders: legs black save for the yellow apices of femora, bases and apices of tibiae and most of the tarsi; metasternum membranous behind; abdomen black, more elongate and less constricted, the second segment not broadened behind; hypopygium greatly enlarged and protruding; stigma entirely black. Length 15 mm.; wing 10.5 mm.

Type locality.—Santiago, Chile (1924, A. Faz).

Type.—Cat. No. 28752, U.S.N.M.

VALDIVIA RUFICAUDA, new species

Female.—Very close to *V. nigra;* in fact, it may prove to be the female of that species, but, because the differences are so striking, it appears to be the better plan to describe it under another name.

Antennae black, the third joint smaller and the arista less stout (normal type) than in *nigra*. Face rather deeply concave, the epistoma projecting a little beyond the antennal prominence; legs more brownish than in *nigra*, the torsi more extensively yellowish; abdomen entirely reddish yellow, not constricted basally, but progressively narrowed toward the base; wings as in *nigra*. Length 11.5 mm.; wing 9 mm.

Type locality.—Santiago, Chile (1924, A. Faz).

Type.—Cat. No. 28753, U. S. N. M.